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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/823,067

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04/21/2008

EXAMINER

KANE, CORDELIA P

ART UNIT

PAPER NUMBER

2132

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/823,067	Applicant(s) SILVESTER ET AL.	
	Examiner CORDELIA KANE	Art Unit 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-19, 28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-19, 28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 19, 2008 has been entered.

Response to Arguments

2. Applicant's arguments filed February 19, 2008 have been fully considered but they are not persuasive. Applicant argues that Gennaro teaches only three types of authentication data, a personal identifier, challenge questions and a biometric sample. However, Gennaro, in his example, teaches three types of challenge questions and therefor five types of authentication data total (column 9, lines 6-11). Applicant goes on to argue that Gennaro fails to teach N less than Z authorization data types to authorize a user. However, Gennaro teaches that the actual challenge list that determines what is asked of the user when they are being authorized contains m values, where m is less than the total number of challenge questions asked (column 9, lines 13-18). So when a user is to be authorized he is asked for his identifier, and then asked each of the challenge questions corresponding to the challenge list, and a biometric sample

(column 9, line 56-column 10, line 16). Therefor the authorization data types required for authorization is less than those required at registration.

Claim Objections

3. Claims 14 and 28 are objected to because of the following informalities: It appears that the variable N and Z were confused. In the other claims Z is the authentication factors provided at registration and stored, and N is the factors provided at authorization. Therefor the data types received should be less than the data types stored. For the purposes of examination it is assumed that the variable names were intended to be used as they are in the other claims. Appropriate correction is required.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

5. Claims 1, 2, 7, 8, 10, 14 – 18, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosario Gennaro et al's US Patent 6,317,834 B1. Referring to claim 1, Gennaro teaches:

- a. Receiving Z first multi-factor authentication data of Z different types (column 9, lines 1-11).
- b. Encrypting the first multi-factor authentication data (column 9, lines 33-35).
- c. Storing the encrypted first multi-factor authentication data (figure 7A, #769).

- d. Determining if the second received multi-factor authentication data matches a subset of the first multi-factor authentication data of N different types (column 9, line 56- column 10 line 19) a user being authenticated if the second authentication data matches the subset of the first authentication data (column 10, lines 23-25).
- 6. Referring to claim 2, Gennaro teaches that one of the inputs is a biometric sample (column 9, lines 2-3).
- 7. Referring to claim 7, Gennaro teaches:
 - e. That the resource being accessed is a database (column 1, lines 60-61). It is inherent that the system would be a computer and therefor have a processor, non-volatile memory, and a bus.
 - f. Receiving first user authentication data of Z different types(column 9, lines 1-11).
 - g. Storing the encrypted first user authentication data (figure 7A, #769).
 - h. Determining if the second received user authentication data matches a subset of the first user authentication data (column 9, line 56-column 10, line 19) the second user authentication data including authentication data of N types where N is less than Z (column 9, lines 11-18).
- 8. Referring to claim 8, Gennaro teaches encrypting the first multi-factor authentication data (column 9, lines 33-35).
- 9. Referring to claim 10, Gennaro teaches that one of the inputs is a biometric sample (column 9, lines 2-3).

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10. Referring to claim 14, Gennaro teaches:

- i. Receiving N first multi-factor authentication data of N different types (column 9, line 56 – column 10, line 19).
- j. Decrypting the second multi-factor authentication data (column 3, lines 14-16) including Z different types of authentication data where N is less than Z (column 9, lines 1-18).
- k. Determining if the first multi-factor authentication data matches a subset of the second multi-factor authentication data (column 10, lines 16-19).

11. Referring to claim 15, Gennaro teaches:

- l. Granting access to the resource if the first multi-factor authentication data matches the subset of the second multi-factor authentication data (column 10, lines 23-25).
- m. Denying access if the first multi-factor authentication data does not match the second multi-factor authentication data (column 10, lines 21-23).

12. Referring to claim 16, Gennaro teaches requesting the first multi-factor authentication data in response to an attempt to access the resource (column 1, lines 58-61).

13. Referring to claim 17, Gennaro teaches that the first multi-factor authentication data includes a biometric sample (column 10, lines 15-16).

14. Referring to claim 18, Gennaro teaches:

- n. Receiving second multi-factor authentication data (column 9, lines 1-6).

- o. Encrypting the second multi-factor authentication data (column 9, lines 33-35).
 - p. Storing the second multi-factor authentication data (Figure 7A, #769).
15. Referring to claim 28, Gennaro teaches:
- q. Requesting autonomous user authentication sub-system to perform user authentication (column 9, lines 56-57).
 - r. Requesting N first multi-factor authentication data of N different types (column 9, line 56 – column 10, line 19).
 - s. Determining whether to grant access to the resource based on whether the first multi-factor authentication data matches a subset of second multi-factor authentication data (column 10, lines 15-25) where the second multi-factor authentication data is encrypted and stored (Figure 7A, #769) the second multifactor authentication data including Z types of authentication data where N is less than Z (column 9, lines 14-16).
16. Referring to claim 29, Gennaro teaches that the first multi-factor authentication data includes a biometric sample (column 10, lines 15-16).

Claim Rejections - 35 USC § 103

17. Claims 4, 6, 12, 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gennaro and further in view of Katsuya Nakagawa's US Patent 5,070,479. Gennaro discloses all the limitations of the parent claim. Gennaro does not

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appear to explicitly disclose the processor being a microprocessor, or the two non-volatile memories being separated. However, Nakagawa discloses:

- t. That the processor is a microprocessor (column 4, 32-33). (claim 4)
- u. That there is a second processing unit separate from the first processing unit for performing authentication (column 15, lines 42-45). (claims 6 and 19)
- v. That the second non-volatile memory is physically separated from the first non-volatile memory (column 1, lines 20-24). (claim 12)
- w. It is inherent that if the second non-volatile memory is physically separated from the first non-volatile memory that it is also logically separated. (claim 13)

18. Gennaro and Kanagawa are analogous art because they are from the same field of endeavor authentication. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Gennaro and Kanagawa before him or her, to modify Gennaro to include the microprocessor, and separate memories and processing of Kanagawa. The motivation for doing so would have been because a microprocessor is well known in the art, and that having separate memory and processing for authentication creates a more secure computing environment.

19. Claims 3, 5 and 9 are rejected under 35 USC 103 (a) as being obvious over Gennaro in view of Walter Harris et al's US Patent 7,000,829 B1. Gennaro discloses all the limitations of the parent claim. Gennaro does not appear to explicitly disclose using the Trusted Platform Module or protected execution. However, Harris discloses:

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x. Using a Trusted Platform Module, and including the cryptographic engine (column 9, line 66 – column 10, line 4). (claims 3 and 9)

y. Utilizing one of the specifications that provide protected execution (column 10, lines 10-11). (claim 5)

20. Gennaro and Harris are analogous art because they are from the same field of endeavor, cryptography. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Gennaro and Harris before him or her, to modify Gennaro to include the Trusted Platform Module that provides protected execution of Harris. The motivation for doing so would have been that it provides a more secure and trusted computing platform (column 10, lines 10-11).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CORDELIA KANE whose telephone number is (571)272-7771. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. K./
Examiner, Art Unit 2132

/Benjamin E Lanier/
Primary Examiner, Art Unit 2132